Abstract

As part of its urban redevelopment strategies, the city of Bremerhaven transformed itself into Germany's centre for the offshore wind energy industry. Locally produced wind turbines have come to embody the promises of the city's regeneration in the context of the nation's once ambitious efforts to switch to renewable energies. The *Energiewende* should have resulted in a sustainable future for Bremerhaven, both in economic and ecological terms. However, as Germany's poorest city, Bremerhaven continues to face severe social problems, from high unemployment to widespread poverty. Under these circumstances, the city pledged to fight the impact of non-renewable energy by becoming a Climate City. It started a process that shall result in the wholesale transformation of the city and its citizens. Bremerhaven's climate change mitigation efforts involve various projects of energy education, which interpellate the whole strata of the local population into reducing the impact of their energy consumption. This chapter unpacks the logics and effects of such attempts at producing energy-efficient citizens by

exploring how local activists conceptualise energy impacts in the context of urban poverty and deprivation. Whilst most of my informants take issues of class into consideration, they frame mitigation as an ethical, not a political project, falling short in demands for energy justice and citizens' rights to secure environmental futures.

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Class, CO_2 and urban climate change mitigation

On saving energy in a post-industrial German city

Felix Ringel

Introduction

Social scientists around the world try to assess the manifold impacts "energy" has. They look at all aspects of energy: its production (Pearson, 2013; Willow and Wylie, 2014), distribution (Winther, 2008) and consumption (Whilhite, 2013, Wilk 2009); related politics, ethics and infrastructures (von Schnitzler, 2013; Bickerstaff et al., 2016; Smith and High, 2017); its legal, cultural, social and economic ramifications (Shove and Walker, 2014; Strauss et al., [2013]2016; Love and Eisenhour, 2016) as well as the mundane ways energy is involved in everybody's life (Castán and Bulkeley, 2013; Moroșanu, 2016; Edwards and Bulkeley, 2017). Changing energy regimes are seen to have a grip on the social, whether as the central focus of power and governance, usually analysed in a Foucauldian framework (Mitchell, 2011; cf. Boyer, 2014, 2015; Know 2014), or as the new centrepiece of contemporary political economies, in which the provision of energy is seen as an essential part of a society's infrastructure (Nader, 2010; Whilhite, 2015). Indeed, energy shapes how our societies work, and the social sciences and humanities want to account for this impact (Szolucha, this volume). These current trends in social research on energy tread new ground, but social scientists are not the only ones assessing the impacts of energy.

This chapter looks at local discourses about the impact of, as much as on, energy in one particular post-industrial city, the north German harbour city

of Bremerhaven. As the aspiring national centre for the offshore wind energy industry, this city is related to energy in more than one way. Renewable energies have been at the heart of this city's sustainable urban regeneration strategies in the post-industrial era. Furthermore, Bremerhaven has also aspired to transform itself into a Climate City (*Klimastadt*). As many other cities worldwide (cf. Betsill and Bulkeley, 2007; Slavin, 2011; McGuirk et al., 2016), it has taken the challenges of climate change head-on, and thereby established new understandings of energy impacts. These socio-cultural changes also resulted in new forms of citizenship and ecological activism in relation to energy (see also Cantoni et al., this volume). However, as elsewhere, local discourses are very ambivalent about issues of class, justice and responsibility. I here track the specific configurations of class in this specific, energy-sensitive context, in which the deliberation of energy impacts takes centre stage in local everyday lives and amongst a vast network of energy activists. In the context of this volume on energy impacts, this shall allow for two interrelated arguments, one with regards to impact, the other in relation to class.

The first argument explores local climate and energy activism in order to expand our understanding of impact. Proponents of a political ecology approach to energy impacts usually scrutinise particular clashes of, and conflicts between, for instance, energy companies and local inhabitants (see Askland and Bunn; Betti; Freng Dale, all this volume). Whilst mapping the negative impacts of energy projects, they already partially understand such conflicts along the lines of class (capitalist exploiters vs. local exploited). However, in many places energy impacts are judged in much more ambivalent ways, being simultaneously invested with conflicting hopes and fears. In Bremerhaven, for instance, renewable energies give rise to new economic and ecological hopes. These impacts are seen to be predominantly positive and they incite new local practices and ideas. In fact, environmental activists in Bremerhaven have their own theories about the relation between individual energy consumption and global climate change. Their epistemic leap from individual (energy) agency and responsibility to macro-ecological climate change mitigation effects is not farfetched. My informants thereby join the social sciences in scrutinising energy impacts by ascertaining how they can reduce the impact of their energy consumption on the planet's climate. These local discourses about energy saving and climate change mitigation, however, built on certain ideas about class, citizenship and responsibility, which have their own sociocultural repercussions. They produce specific subjectivities (cf. Mason, 2014), socialities and politics (cf. Harvey, 1993). I show how in these discourses in Bremerhaven, "class" is used as a local heuristic, but in unpoliticised ways. As in similar discourses worldwide, this lack of politicising energy impacts prevents activists and academics to fully counter them.

The second argument follows this unpolitical configuration of class, particularly of "the poor," in relation to climate change mitigation practices in Bremerhaven. Although local activists have developed a class-sensitive strategy to promote the saving of energy by targeting particular socio-economic groups with specific programmes and incentives, they have not advocated the implementation of a viable "polluter pays principle" that could regulate energy consumption and the production of greenhouse gases, particularly of CO_2, in terms of class and energy justice. Although the calculation and monitoring of the production of CO_2 is becoming increasingly sophisticated, different responsibilities for climate change are unacknowledged and the general regulation and penalisation of CO_2 production remains absent or ineffective.

This absence, I claim, indicates a broader shift in political culture, which might explain why local and translocal discourses on climate change mitigation are configured this way. As human geographer Ash Amin has it: in neoliberal societies, "the poor are judged . . . as masters of their own destiny rather than as the victims of injustice and disadvantage" (Amin, 2013: 152). Since a "discourse centred on human capabilities plays to the neoliberal critique of the state" (ibid., 146), "the poor" are not seen to be able to demand more radical changes in national and international climate mitigation policies. The interpellation of the poor into energy-saving practices thereby constitutes them on the one hand as empowered participants, whose contributions can help saving energy and preventing climate change, and on the other as people who are as responsible for climate change as their wealthier co-citizens. This configuration of class, however, takes their right away to hold the main polluters responsible.

The following argument is based on empirical material that I collected between 2013 and 2017 in altogether 12 months of ethnographic fieldwork in Bremerhaven. During fieldwork, I used participant observation, semi-structured interviews and archival and internet research in order to study very different aspects of the city's current transformation. I here focus on the widespread network of local climate and energy activists, official agencies and public institutions, whose professional work I recurrently attended and whose potential impact I discussed with activists and non-activists. As is typical for social anthropologists, I present this material in form of ethnographic vignettes. However, these vignettes stand in for a much broader understanding and analysis of the city's complicated present.

My argument aims at unpacking the logics that citizens of Bremerhaven deploy in their consideration of the impacts of energy consumption. It falls into four steps: First, I will further introduce my fieldsite in order to map its manifold relations to energy impacts. Second, I will scrutinise the ways in which people feel they can have an impact on the earth's – and their hometown's – future by changing their own energy consumption, thereby deploying the idea of "small steps" to account for these practices' efficacy.

Third, I present practices of interpellation that incite particular groups of citizens of Bremerhaven to change their energy consumption. Fourth, I add the dimension of class to the analysis of these practices, thinking about issues of urban carbon governance in relation to poverty. In the conclusion, I argue for thoroughly repoliticising the academic and non-academic discourses on energy impacts.

The hope of energy in Bremerhaven

Contemporary cities cling to superlatives when describing themselves to potential new investors, citizens or visitors. The inhabitants of Bremerhaven refer to their hometown as Germany's biggest harbour city on the North Sea coast. They also like to think of Bremerhaven as the nation's centre for the offshore wind energy industry: its "home port" (*Heimathafen*), as the city's investment and development agency has it. Indeed, currently, the city houses (onshore) the biggest offshore wind turbine in the world with a rotor diameter length of 180m, an impressive, more than 200m-tall pilot plant – the new landmark in the southern harbour. Bremerhaven is also one of the first German Climate Cities, aspiring to reduce its carbon footprint more than what is demanded by the *Energiewende*, the nation's once very ambitious transition to renewable energies, which has been halted and slowed down by consecutive federal governments. There is also one superlative that people would refrain from using when introducing their city: Bremerhaven is Germany's poorest city, struggling with high levels of unemployment, poverty, crime and infrastructural dilapidation.

In Bremerhaven, to ascertain the impact of "energy" is not a straightforward endeavour. After the crisis of its main industries (ship-building and high-sea fishing) in the 1970s and further socio-economic crises in the 1990s, the production of offshore wind turbines gave the city new hope. Renewable energy was Bremerhaven's way out of the crisis, and this emerging industry did initially create several thousand jobs. Old brownfields in the harbour were reused for the production of huge rotor blades and tripods. Their transport to the city's northern harbour and further to the emerging offshore power plants in the German Bay tasted of progress and renewed importance. As many of my informants underlined: it felt like finally the city was picking up again. Bremerhaven had found a path to a successful future via the hope of renewable energies. On the presumably sound economic basis of the offshore wind energy industry, Bremerhaven would finally, many predicted, overcome its decline. However, after several crises in the still nascent industry, these hopes are hardly sustained. The reorientation of the local economy has not fulfilled its promises with regards to the projected socio-economic impact. However, despite these disappointments with renewables, many people still work towards a shift in the energy regime of the city.

There is, however, another prevalent way that "energy impacts" play a dominant role in Bremerhaven. It concerns the consumption and usage of energy in relation to climate change. The poster for the 2009 launch of the Climate City initiative exhibits this local concern with energy impacts quite dramatically. Depicted on it is an impressive simulation of Bremerhaven's potential not too distant future, in which its city centre has been completely flooded after the dykes – currently continuously strengthened with great efforts – finally failed to withstand the rising sea levels. In the local imaginary, Bremerhaven's new city centre is also a symbol of the city's regeneration strategies through its investment in tourism. From 2004 onwards, the centre was revamped with a Dubai-esque four-star hotel and conference centre, the German Emigration Centre, the amorphous building of the Climate House (*Klimahaus*) science and entertainment centre, a shopping mall irritatingly named *Mediteraneo*, a shiny marina and several high-end apartment houses overlooking the dyke. In the 2009 poster's depiction of an ecologically dystopian future scenario, however, even the *Klimahaus* is hardly visible under the water surface. With the whole city centre flooded by the North Sea, only the higher landmarks peak out: the Dubai-esque hotel, the 1970s high-rise apartment buildings and the city's TV tower. As this representation of the local impact of climate change shows: long-term energy impacts are clearly envisioned in Bremerhaven. The interest in, and advocacy for, renewable energies is therefore not just a matter of potential economic prosperity or ethical musings, but an actual concern for the city's survival. But how are these impacts conceptualised in practice, and how can people have their own impact on them?

Small steps to saving the world

The climate and energy activists in Bremerhaven have many reasons to think that people should be aware of the impact of their own energy consumption. One of them is a straightforward economic reason: energy in all its different forms is expensive and constitutes a large part of people's monthly spending. However, the ecological dimension of energy consumption is locally of similar importance to many of my informants. This dimension is usually conceptualised in ethical terms. In fact, there is one particular narrative that sums up the incitement to act ethically when it comes to energy consumption. This narrative connects climate change to energy consumption, and one of its central features is that it works across different spatial and temporal scales. We find it, for instance, in the *Klimahaus*, whose science- and experience-based exhibition, a journey once around the world through different climate zones, extrapolates the terrible consequences of climate change. A central feature of the exhibition, ethical invocations encourage the visitors to take matters into their own hands. As one of the last interactive terminals in the closing section has it: "It's great that you want to

save the climate, too. For that, you at first have to know which aspects of your life produce how much CO_2 emissions." Heating, electricity and mobility are named as the main suspects. The text then continues: "Even small steps can make an important contribution!" (*Auch mit kleinen Schritten kannst Du einen wichtigen Beitrag . . . leisten.*) – summarising the main logic deployed in this incitement to change.

This notion of "small steps" mirrors academic approaches, including those to energy justice (for example, Sovacool and Dworkin, 2015), but it is also one of the most common local invocations and legitimations of individual agency with regards to energy consumption and climate change mitigation. The organisers of the Climate City Day in 2015, in an article entitled "Am I a Climate Fossil?" also claim that "small steps count" (*kleine Schritte zählen*) whilst encouraging the citizens of Bremerhaven to scrutinise all aspects of their lives in order to stop being of the past (i.e. a climate fossil) when it comes to energy consumption. Similarly, the ambitious "Green SAIL" sustainability project of the afore-mentioned Dubai-esque hotel deploys a similar idea. This project was developed in collaboration with the "Climate Academy" (*Klima:Akademie*), organised by the local non-profit climate saving agency "Energy Consensus" and dedicated to the green transformation in local businesses. In one of the "Green SAIL" publications, the authors also state under the heading of energy efficiency (*Energie-Effizienz*): "Many little measures achieve great energy savings" (*Viele kleine Maßnahmen erzielen große Einspareffekte*).

Indeed, in Bremerhaven and elsewhere, climate and energy activists as much as their lay sympathisers believe in the efficacy of their practices, however mundane or minute they might be. In a truly global spirit, for them, saving energy has an impact on the world's climate and humanity's survival. What initially seems like quite a jump in scale in temporal and spatial terms – from the clothes you wear and the fridge you own to the melting of the ice caps and the future survival of the planet – is a lived reality for many activists. They take ethical and conceptual inspiration from ideas of ecology and sustainability that inherently transcend local concerns by embedding these concerns in much farer reaching sets of factors and global relations. They deploy a logic long established in activist circles, for instance in the local North-South-Forum (*Nord-Süd-Forum*), which continue to advocate to "Think Globally – Act Locally!"

This logic allows local activists to believe in the impact of their own practices. It is the same logic that helps them to conceptualise the impact of energy and their individual contributions to overall CO_2 emissions. Irrespective of one's particular energy consumption, all people produce CO_2 – and therefore all people necessarily have an impact on the planet's climate. That they do so differently, i.e. that some people make bigger and some smaller (negative) steps, so to speak, is not part of this local narrative. The

impacts of everyday energy practices and choices simply all add up in a more distant future.

One of the most prominent climate change mitigation projects in Bremerhaven, the ¾ Plus project, is aware of the temporally distant implications of this mitigation. Under the slogan "Join us in saving the climate!" these activists underline the fact that "what we change today, will only affect the climate in 20 to 30 years' time!" This makes believing in one's power, agency or impact much more difficult. Still, the same project's official poster showcases what activists believe they have some power, agency or impact over: practices of energy consumption, targeting both the amount and form of energy being consumed. For this particular group it is, indeed, only "Renewable Energies that improve the Climate!" Until these renewables provide enough energy for the world, however, it is the impact of the consumption of non-renewable energies that is to be mitigated. I will discuss this local focus on energy consumption – which contrasts with the absence of a forceful local political demand for an actual *Energiewende* in terms of energy production – in more detail in the next section, detailing the ways in which all citizens of Bremerhaven are interpellated, in Althusser's (1971) sense, into climate change mitigation.

Saving energy in an aspiring climate city

There are many actors and organisations that want to limit the impact of energy consumption in Bremerhaven. They come under different names. For example, in all primary schools, we find energy detectives (*Energiedetektive*), who carefully monitor their class' energy consumption. There is also a whole variety of professional energy consultants (*Energieberater*), who advice the local population on saving energy, for instance those from the city's "energy efficiency table" (*Energieeffizienztisch*) project or the various ones that exhibit and showcase their work to the public at the "Bremerhaven Energy Days" fair (*Bremerhavener Energietage*). Some companies have their own "energy team" (*Energieteam*), others call their internal experts for energy consumption "energy scouts" (*Energie-Scouts*). Throughout the city, "energy experts" (*Energieexperten*) hand out the legally required "energy passports" (*Energiepass*) for buildings, offer all kinds of "energy consultations" (*Energieberatungen*) for companies as well as families, such as the "energy ward round" (*Energievisite*), or work on specific "energy concepts" (*Energiekonzepte*) for private and commercial investments in infrastructure and technology.

The abundance of these neologisms in Bremerhaven indicates that the problematisation of energy consumption has locally resulted in the production of a variety of new subjectivities and practices. Let me present only one example in more ethnographic depth in order to show how

prevalent the concern with the impacts of energy consumption is. This particular project (like many others) follows the logic pointed out above: it targets a certain group of people, pupils in this case, and encourages them to have their own small-scale positive impact on the world's future. It configures these small steps as the right ethical move forward – without a more political demand for more profound steps to follow.

The ¾ Plus project is a long-standing educational scheme of the state (*Land*) of Bremen that aims at saving approximately 15% of local schools' energy and water usage through behavioural, non- and low-investment changes. It has been running for over two decades, and was introduced to motivate pupils to partake in the saving of energy in their everyday school lives. The project, to their organisers' pride, was so successful that virtually all schools in Bremerhaven currently run it. The idea is simple: pupils are not only theoretically taught about energy and water consumption, but they also practically engage in saving energy. This involves hands-on detective work: at primary school level, all pupils at one point during the school year become "energy detectives" (*Energie-Detektive*). During their turn, they are responsible for one of three very specific aspects of their class' daily water and energy usage.

Heating detectives are in charge of checking the radiators, and turning them up or down depending on the time of day and use of classroom. Classrooms should be 18–20°C, whereas corridors, changing rooms and sport halls all have different target temperatures (of 12–15°C, 22°C and 17°C, respectively). The same group is also in charge of airing the classrooms. During breaks they turn off the radiators before airing and then turn them on again afterwards. Proper airing also has its guidelines: it should last five minutes with the windows fully opened and not just tilted. In a workshop for teachers about the ¾ Plus scheme one of the enthusiastic activists showed a very impressive device for teaching airing. It looked like a terrarium but was filled with a source of smoke. As every pupil would immediately see, tilting a window (respectively only one side of the terrarium) is very inefficient in comparison to opening two sides of the contraption/windows and allowing a proper flow of air through the room. The proper airing in this workshop presentation was in fact so successful that the fire alarms came on. The second group, water detectives, takes care of water consumption. They double-check that no taps are running and remind their classmates to use the flush properly and not to waste water whilst brushing teeth or doing the dishes. Electricity detectives are in charge of reducing electricity consumption. They check that all lighting and electric devices are turned off when not in use, particularly during vacations.

As most teachers confirm: the children are very passionate about their role as energy detectives. They proudly wear the buttons that indicate their respective duty and they enjoy getting rewarded for what they are doing. The deal with the city is beneficial for everyone: ¼ of whatever was saved

throughout a year goes to the school's maintenance and investment budget and is thereby reinvested in ¾ Plus activities. The remaining ¾ are given to the school for whatever purpose the school sees fit, such as buying new toys or books. However, there are unsurprisingly some mathematical problems: for instance, how can pupils continue to save more energy each year, or how to factor changing weather conditions into the overall calculations?

Although there are many obstacles with regards to monitoring, measurement and rewards, so far all schools have received a nominal sum of up to 2,500 Euros at the end of each year, and the project continues to be very popular. Indeed, due to its widespread application in Bremerhaven, there is virtually no young person in the city who, at one point during his or her school career, has not been exposed to this interpellation into energy saving. Local activists even keep on extending the scheme: a new project called "*ener:kita*" targets the energy consumption of local kindergarten children, who are encouraged to look for the "power thief" (*Power-Klauer*) and playfully fight their energy consumption in order to save the climate. Students in secondary schools, too, work in "energy teams" (*Energie-AGs*). Although more research-based, the implementation of the ¾ Plus project in secondary schools still involves impressive experiments to visualise energy mitigation, such as the use of a giant professional fog machine in class to illustrate, again, proper airing practices.

As we have seen: all school students in Bremerhaven are interpellated into a position from which to scrutinise their own energy consumption, and to assess the impact this consumption – as much as their mitigation efforts – can have on the planet and its future. This omnipresent incitement to reflect upon energy impacts seems indistinct at first sight – part and parcel of a diffuse notion of power that is enacted on the grounds of the long-standing problematisation of climate change. Virtually everybody is ethically drawn into energy mitigation. However, apart from producing and maintaining new forms of local expertise and subjectivity, these climate change mitigation practices also produce and reproduce particular understandings of class and citizenship. Often unpolitical in character, they do not foster a political agenda or clear-cut policy demands. In order to think through this absence of a more politicised discourse, I unpack the specific local configurations of class, energy justice and responsibility in the next section. I focus on practices that reach out to specific socio-economic strata of the local population, particularly the one that is most prominent in Bremerhaven: people living in poverty.

Class and local energy mitigation

Before focusing on one particularly interesting project aimed at low-income inhabitants of Bremerhaven, let me point out a few efforts that in their own ways already take "class" into consideration. For example, in recent years,

Heinfried and Karen from "Energy Consensus" (*Energiekonsens*), a non-profit agency for climate protection and CO_2 reduction of the *Land* Bremen, have focused on one social group in Bremerhaven most prominently: local property owners. Funds from federal and state level have singled out renovation and reconstruction as priority areas for saving energy and CO_2, supporting, for instance, the installation of state-of-the-art heating systems with up to 500 Euros. Agencies like "Energy Consensus" thus recruit owners of detached, double and terraced houses to inform them about the quite generous funding schemes currently available. These efforts are accompanied by public lectures and discussions that inform house owners exclusively about up-to-date forms of insulation, heat pumps etc. They encourage those already owning property to consider the option of investing in high-end, highly efficient, often quite expensive technical solutions. These investments, as is quickly shown in simple graphs and calculations, will amortise quickly in financial terms. One particularly popular project to incite such investment decisions is the thermography-walk. On such a walk, people are taken for a stroll around the city in the evening. An expert shows them live infrared camera imagery and showcases how much energy is wasted in houses badly insulated and fitted only with what in Germany at that time was already considered old-fashioned: double-glazed windows. Such efforts obviously have a certain "class" in mind: those people who can afford to own and renovate houses. Everybody not owning, renovating or building a house is excluded from these publicly funded forms of saving energy. But the agency has other offers for other classes, too.

One that I encountered at the beginning of my fieldwork in 2013 was the "Your Climate-Market 2050" (*Dein Klimamarkt 2050*) project. This was a low-threshold outreach initiative targeting the citizen not as a political being, but as an ethical consumer. A mobile supermarket, it temporarily occupied empty stores in shopping malls or high streets in and around Bremen and Bremerhaven in order to inform visitors in a very stylish exhibition about the carbon footprint of the products they consume. The whole exhibition was made out of recycled cardboard and was itself recyclable. It provided information about the carbon footprints of all kinds of products: food items such as ham, sausages, cheese, fruits and vegetables as much as electric devices or clothes. In accordance with its supermarket theme, it strongly advertised for "CO_2 Saving Weeks," during which visitors can learn how to save up to 10kg CO_2 (presumably per year) in the ham and cheese section alone. Visitors were taken on a virtual shopping tour through the fake market, meanwhile being educated about the choices they have for mitigating their individual carbon footprint. Respective options were extrapolated on the basis of CO_2 and monetary calculations, which circumscribe consumption as the main activity for energy and climate change mitigation.

For instance, I learned that hard cheeses have a much worse carbon footprint in comparison to soft cheeses because more milk and energy went into their production. More milk means more cows, and as we all know by now, it is the cows' digestive system that emits a lot of methane, which in turn is one of the most aggressive greenhouse gases. The visitors are also exposed to more straightforward calculations, such as with regards to their choice of light bulbs. The main message there: invest more money for energy efficient bulbs now, and save CO_2, energy and money in the long run. Whereas people are not encouraged to consume less, they are asked to consume differently, in more ethical and ecological terms. These cost-benefit analyses were often quite convincing until it came to fair-trade, CO_2 neutral clothing. The prices of these stylish hoodies and T-shirts startled many visitors, including myself. We knew that they were ethically wonderful, but at this price, they were simply unaffordable for many of those targeted by this outreach project. So whereas this supermarket was open to any consumer regardless of their socio-economic standing, its advice proved to be unaware at times of differences in spending power.

At check-out, the friendly cashier talked me through my individual choices and made me aware of how I could save even more CO_2 through different consumption choices. She also invited me to become a "friend of the climate" (*Klimafreund*) and leave my email address for receiving further updates and reminders. Becoming a *Klimafreund* also meant that I had to personally promise to save more CO_2. My personal "*Klimafreunde*-promises" included the following commitments with according annual CO_2 and financial savings, laid out neatly in several reminder emails: to wash my clothes at 30°C rather than 60°C (CO_2 savings: 49kg; financial savings: approximately 14€); to buy more organic tomatoes (CO_2 savings: 208kg; financial savings: none); to clear radiators from curtains and furniture (CO_2 savings: 176kg; financial savings: 36€); to reduce my room temperature by 1°C (CO_2 savings: 375kg; financial savings: 110€); to only eat organic meat from sustainable local farms (CO_2 savings: 26kg; financial saving: none); to buy an energy efficient A+++ fridge (CO_2 savings: 116kg; financial savings: 26€); to completely change to renewable energy sources, which would entail my biggest CO_2 savings (2,100kg), but would not save anything in financial terms. Overall, as the recurrent emails kept on reminding me, I can save 3,050kg of CO_2 and approximately 186 Euros over the next year. The email usually closes with the reminder: "Please, take your promises seriously, because only deeds help the climate!"

I have noted down these estimated numbers because they indicate how much effort and concrete calculation is put into these projects of ethical interpellation. With scientific proof and clear-cut economic and ecological calculations, people are invited to join the broader efforts of saving energy, CO_2 and the world's future by changing their consumption patterns. However, what the numbers also indicate is not just that the devil is in the

detail when it comes to energy consumption mitigation, but that the economic argument for saving energy remains central to these forms of encouragement (see Know 2014). The choice of buying organic tomatoes or an A+++ fridge are the right ones from an ethical point of view, but they also depend on the financial resources people have. Saving energy and CO_2 quickly becomes an issue of financial capacity, which is only partially acknowledged by many activists that I worked with. Interestingly, whilst there is at least some understanding that some of these choices depend on your economic resources, there is hardly any account of the different impacts people have with regards to their class-specific energy consumption patterns. As the ethnographic material indicated, whereas everybody is invited to join the efforts of reducing energy impacts, this burden is in no correlation to one's impact on producing greenhouse gases in the first place. I will expand on this in the next section, but let me discuss two projects that specifically target poorer people beforehand.

One very successful project in Bremerhaven follows the common format of the "Repair Café." It was locally initiated by the Youth Climate Council (*Jugendklimarat*), one of the corner stones of the Climate City programme. It officially tackles climate change mitigation in the name of the city's youth. Its councillors advise the city's urban planning and environment meetings, but they also conceptualise and exercise their own climate change mitigation projects. The "Repair Café" was designed to attract what the young councillors perceived to be the "normal" citizens of Bremerhaven to do something for the planet's future. In their eyes, these citizens included the ones that could benefit from a "Repair Café" most: the poor inhabitants of the city. In a central, but run-down area, the councillors once every other month occupied an empty shop and assembled a group of passionate voluntary experts to help people fix their broken radios, toasters or record players. As the councillors underlined, this way, participants could do something for the environment as well as for their wallet.

A similar incentive is key to another project that is part of a broader, federal scheme but specifically targets poorer communities. To get them on board in the fight against climate change, this project also claims that people "can save the world and save money at the same time." The Förderwerk e.V. Bremerhaven, a non-profit NGO, follows its motto "We foster the future!" (*Wir fördern Zukunft!*) by implementing funds from EU, federal, *Land* and city level in collaboration with the local employment agency. This local branch of the federal employment agency already supports several projects for the long-term unemployed. For the project "Saving Energy Check" (*Stromspar-Check*), it trains half a dozen permanently unemployed people to become (and here the vocabulary differs) official "energy advisors," "environment scouts" or "energy saving checkers" (*Energiesparberater/Umweltscout/Energiespar-Checker*). These trained consultants then offer visits to local households that depend on unemployment benefits.

One of the advisors, Mr. Wagner, gave an interview to the local media in 2015. As he frankly reports: in the previous one-and-a-half years he has visited over 100 low-income households, but people are sceptical and he could have actually visited many more if there had been more demand. For his clientele, he explains, it is hard to let some stranger into your house. Suggestions that they could save quite some money by buying a new fridge or using the TV's eco setting is most often met with strong disbelief. Interestingly, in his discussion of the problems Mr. Wagner faces in his work, the ethical imperative of saving the world is not deployed. Rather, he is solely concerned with his clients' financial benefits of saving energy, as if this constitutes the only possible motivation for low-income households to save energy. However, he also points out their main obstacle: his clients just do not have the money, so hence they, for instance, rather take the old, used fridge of a friend than buy an energy-saving fridge despite the 150 Euros of funding available for this purchase. For him, convincing his clientele does not work, despite the fact that energy advisors like him bring free equipment such as energy-saving bulbs with them.

These insights into the local conceptualisations of class and energy impact mitigation, show that whereas different socio-economic strata are invited to join the saving of energy and the climate, they are, if at all, interpellated according to their specific capacities, but not in relation to their contribution to the overall energy consumption and greenhouse gas production. Different socio-economic groups are thereby constituted as the very same "energy consumers," whose ethics, not rights, are the focus of local activists. There is no consideration of their varying impacts. Everybody is invited to do the same "small steps," despite the fact that different people contribute differently to contemporary climate change.

Even on an international level, the issue of responsibility for the causes of climate change and energy impacts is hardly sufficiently addressed. Although the Paris Agreement and other accords acknowledge that the rich, industrial countries of the North have more responsibility than the developing countries of the South, this has not translated into binding legislation, but only into voluntary concessions of those who are rightly seen as having the biggest CO_2 footprint in global comparison. In Bremerhaven, too, there is hardly any discourse in place that forcefully promotes a polluter pays principle, whether in class or other terms, despite all intricate concerns and CO_2 calculations. However, there are also moments when this absence is, if not challenged, then at least acknowledged.

Two of the few examples I came across during fieldwork were the following. First, at one of the "Repair Café" sessions, Swantje, one of the Youth Climate Councillors, teased me for my up-coming flight to an academic conference in the US. Her becoming vegan and up-cycling her old clothes, Swantje explained, would amount to nothing in comparison to my transatlantic flight. Her continuous efforts were more than outdone by my

outgoing flights already. As she pointed out in addition, most of the low-income houses in Bremerhaven would not even have the money to fly to the US. Their carbon footprint, hence, is minute in comparison to mine. As she rightly wondered, why are they nonetheless drawn into this effort of saving CO_2 in the first place?

Second, Till, the head of the Climate City office, observed the following in a discussion: Bremerhaven as much as the *Land* Bremen have committed themselves to reduce their greenhouse gas emissions by 40% in 2020, outdoing what is federally required of them. I had asked Till whether this aim could realistically be achieved by the projects he is coordinating. As the city's main officer in charge of local urban carbon governance, he oversees two different kinds of energy-saving projects. He is in charge of managing the city's own CO_2 mitigation by coordinating efforts of the administration with regards to all public infrastructures and services. For this purpose, he champions the European Energy Award application and monitoring. His office also facilitates and coordinates most civil society projects in the city. Counter to the logic of small steps, with which I started this chapter, Till is much more critical of these activities. As he points out with a theatrically indifferent shrug: the carbon footprint of all inhabitants of Bremen and Bremerhaven (approximately 650,000 people altogether) does not even come close to the carbon footprint of Bremen's one steel mill. If this steel mill went bankrupt today, the 40% target would easily be reached, Till says. With the small-step civil society efforts alone, he worries, the *Land*'s efforts will not even come near the given target.

Despite his scepticism, Till continues his efforts to save the earth's climate, but his honest analysis makes a valid point: the discourse on energy consumption impacts might foster the wrong measures and target the wrong people. I am not saying that the grassroots efforts of the many local activists I discussed in this chapter are worthless. However, if we take the warnings by many climate scientists seriously, then they might just not be enough. These small-scale efforts, then, can also be seen as an expression of the ultimate failure of the current neoliberal forms of power, governance and citizenship. As Nicholas Rose (1999) has shown, the rise of neoliberalism has shifted contemporary understandings of power away from considerations of class, rights and political economy. Political discourse has focused on the notions of ethics and civil society instead. The decline of the welfare state materialises this shift further. It constitutes citizens not as political beings with a constitutional right to a secure future, but as consumers whose consumption choices are their primary mode of expressing their political agency and of having an impact on the world. Whereas local activists might find a more political voice in their fight against ethically suspect big firms and global players, their analysis of their own energy consumption remains surprisingly unpolitical. Conceptualising "responsibility" only with regards to climate change mitigation in terms of the global North (as the polluter)

and the global South (as the main entity being affected), neglects the political potential of the category of class in either sphere. A more socially differentiated perspective on energy consumption and greenhouse gas production in the global North might help to repoliticise our energy futures and current practices.

The activists in Bremerhaven, whose efforts I discussed above, paid attention to class issues in their practices of inciting the reduction of energy consumption. However, in their specific configuration of the relation between class and energy impact, they remained in a register of ethics and consumption, which did not develop specific political or legal demands. This uncannily mirrors similar debates on broader scales. The absence of other logics, claims and rights in the context of energy impacts says as much about the relations people currently have towards energy and its impacts as it does underline contemporary ideas about power, politics and agency (see Szolucha, this volume). To claim an impact on the planet's future, however, has to start from a reconsideration of the latter: of the political and legal tools we have in countering climate change. The category of class, as I propose in this chapter, should be part of a reform of current forms of citizenship and activism.

Conclusion

This chapter explored the configuration of energy impacts in the post-industrial city of Bremerhaven. In this aspiring climate city, many activists fight for climate change mitigation by problematising and scrutinising the impact of local energy consumption. They thereby follow what Shove and Walker (2014: 53) claim, namely that "if climate change policy is to make a difference on the scale and at the rate required, it will have to engage more overtly, and more explicitly, with the bundles and constellations of practice on which energy demand depends." However, I would like to add that we should also critically engage with the way we single out, compare and evaluate these practices in social, economic and political terms. Whilst virtually all citizens of Bremerhaven are constituted as "green" citizens of a "climate city," they have not developed a political discourse about responsibility with regards to energy use and CO_2 production. Local discourses thereby mirror global ones when configuring issues of class and impact, if at all, in non-politicised ways, and when failing to implement and deploy something like a polluter pays principle.

This unpolitical approach to conceptualising energy impacts with regards to consumption makes a class-sensitive, rights-based and more democratic debate about mitigation impossible. This current configuration seems to disallow the emergence of a framework in which more drastic measurements can be compelled. The social sciences might, indeed be complicit in this discursive failure (Knox and Huse, 2015). In most of the literature on which

this chapter is based, the term of class does not figure prominently or at all, even in the literature on energy justice (see Jenkins et al., 2016; Sovacool et al., 2017). Only few references to the poor are made, particularly in the context of the global South, where poverty is seen as a hindrance to climate change mitigation and progressive ecological change rather than as an entitlement to be protected from environmental risks or a politically guaranteed and enforced right to a safe future. The social sciences, too, seem to focus on ethics, practical detail and technological fixes. They should, in addition, further scrutinise the epistemic, conceptual and political tools (not) being used in academic and non-academic discourses about energy impacts, as this volume's editor invited us to do (Szolucha, this volume; see also Jasanoff, 2018).

In order to understand the ways in which local energy mitigation practices were (not) politicised, I linked local ideas, concerns and activist practices to issues of class and energy justice. Without wanting to discount my informants' efforts, I still claim that a political economy perspective that holds the main producers and consumers of energy and greenhouse gases democratically responsible is much needed in addition to the admirable work being done on the grassroots level. The practical, legal and political question is which institutions are to oversee and guarantee the introduction of a polluter pays principle, i.e. who is to administer climate change mitigation. A focus on ethics, "small steps" and new refrigerators might irresponsibly miss the point (Jenkins, 2018). As social scientists, we can provide fresh empirical insights into the kind of questions and demands that are not just possible but necessary to be raised in order to mitigate the impact of non-renewable energies instantly.

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